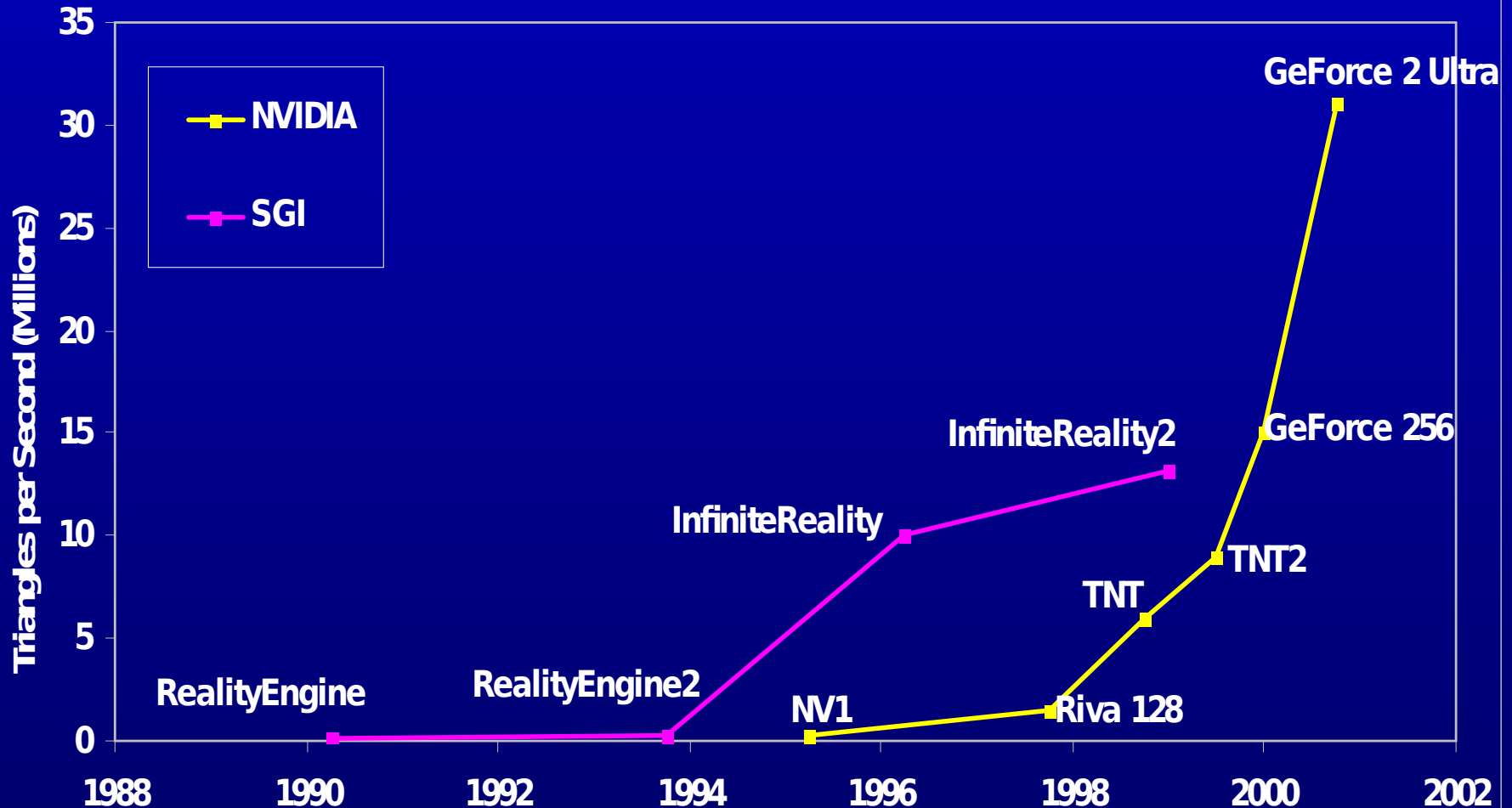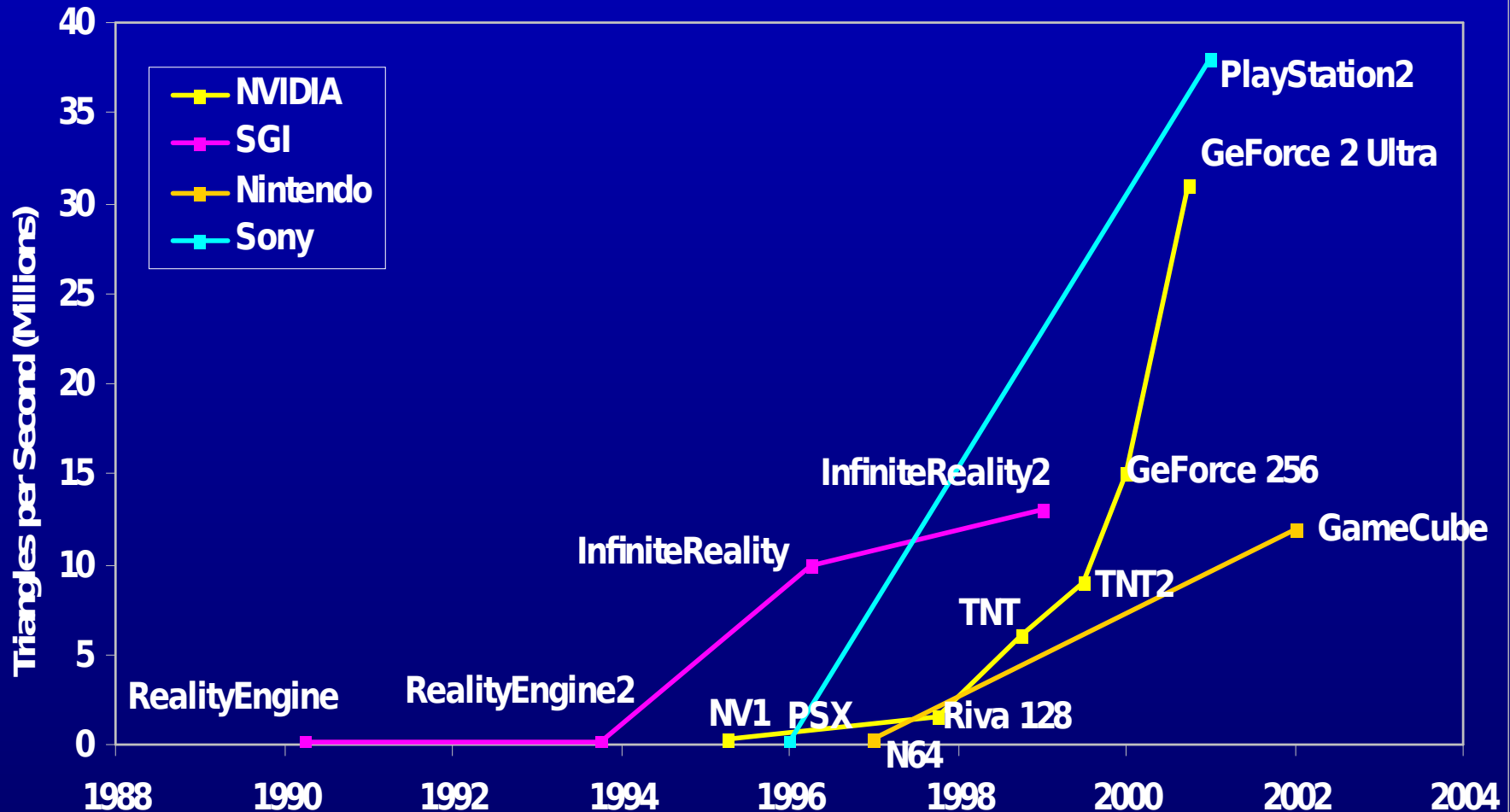# Introduction

Nate Robins

Avalanche Software

Performance

Consoles

Considerations

- Scalability

  16 pipe InfiniteReality2

- Memory

  Visible Human > 4 GB

- Bandwidth

- Stability

  Operating System / Driver / Hardware

Accuracy

- Games always trade accuracy for speed
  - How hot is the gun barrel? We don't care!

- Scientific Visualization usually can't
  - How hot is the gun barrel? That's our *business*!

Realism

- Games can sometimes trade realism
  - Immersion is most important

- SciVis can trades realism for information
  - False color maps
  - Transparent casings

Capabilities

- ## MIP Mapping
  Williams (1983)

- ## Bump Mapping
  Blinn (1978)

- ## Curved surfaces
  Catmull (1975)

- ## Per pixel shading
  Phong (1975), RenderMan

Research

- Game studios are not R&D houses
- We read about (your) research
  - Internet
  - Proceedings (SIGGRAPH, JGT, etc)
- We read (your) books
  - Foley & VanDam, Numerical Recipes
- Game studios are USERS!

Influence

"How to make friends and influence people"

- Make research available

- Talk to hardware vendors

  Entice them with unique features

Thanks

- Chris Johnson
- Rob Nelson
- Remlee Dunford
- Gordon Kindlmann
- Dave Ross
- Avalanche Software